

CLAIMS

I claim:

1. A flexible, laminated woven product, comprising:
a first fiber yarn;
5 a second fiber yarn bonded to the first fiber yarn; and
a polymer dry-lay bonded to a top surface of at least one of the first and second fiber yarns.
- 10 2. The product of claim 1, further comprising an adhesive between the polymer and at least one of first and second fiber yarns, the adhesive operative to bond the polymer to the yarn.
3. The product of claim 1, wherein the first and second fiber yarns are fiberglass.
- 15 4. The product of claim 3, wherein the first and second fiber yarns at least partially define void spaces therebetween; and wherein
the polymer at least partially fills the void spaces.
5. The product of claim 4, wherein the polymer substantially fills the void spaces; and
wherein the first and second fiber yarns each have top and bottom surfaces and wherein the polymer coats both the top and bottom surface of at
20 least one of the first and second fiber yarns.
6. The product of claim 1, wherein the dry-lay bond is a heat bond.

7. The product of claim 1, wherein the yarn comprises a material chosen from the group of: carbon, KEVLAR, polyester, cotton, and fiberglass.

5 8. The product of claim 1, wherein the first and second fiber yarns each have top and bottom surfaces and further comprising a second polymer sheet dry-lay bonded to the bottom surface of at least one of the first and second yarns.

9. The product of claim 1, wherein the polymer sheet comprises an patterned material interspersed in a polymer.

10 10. The product of claim 9, wherein the patterned material comprises woven fibers.

11. The product of claim 1, wherein the polymer sheet comprises from sixteen to twenty-six grams per square inch of thermoplastic.

12. A method for producing a flexible laminated woven product, comprising:

15 placing a polymer sheet on a first surface of a flexible weave, the flexible weave comprising at least one yarn;

heating the combination of polymer sheet and flexible weave to a melting point;

20 in response to heating the combination of polymer sheet and flexible weave to a melting point, bonding the polymer sheet to the flexible weave to form a flexible laminated weave; and

cooling the flexible laminated weave.

13. The method of claim 12, further comprising cutting the flexible laminated weave without fraying or unraveling the yarn.

14. The method of claim 13, wherein the melting point is the melting point of the polymer sheet.

15. The method of claim 14, wherein the step of bonding the polymer sheet to the flexible weave comprises encapsulating the yarn with the polymer.

5 16. The method of claim 15, wherein the weave includes void spaces and further comprising the step of completely filling the void spaces with the polymer.

17. The method of claim 16, wherein the step of completely filling the void spaces comprises the steps of:

10 creating a capillary action to draw the polymer into the void spaces;
and

cooling the polymer.

18. The method of claim 12, further comprising the step of adding an adhesive between the polymer sheet and the flexible weave; and wherein

15 the melting point is the melting point of the adhesive; and

the step of bonding the polymer sheet to the flexible weave comprises bonding the polymer sheet to the flexible weave with the adhesive.

19. The method of claim 12, further comprising the step of adding a coating to the flexible weave.

20 20. The method of claim 19, wherein the yarn is fiberglass.